

BPM 2.0

Business Process Management Meets
Empowerment

Matthias Kurz



| **BPM 2.0**

| **BPM 2.0 Applied**

| **Outlook**



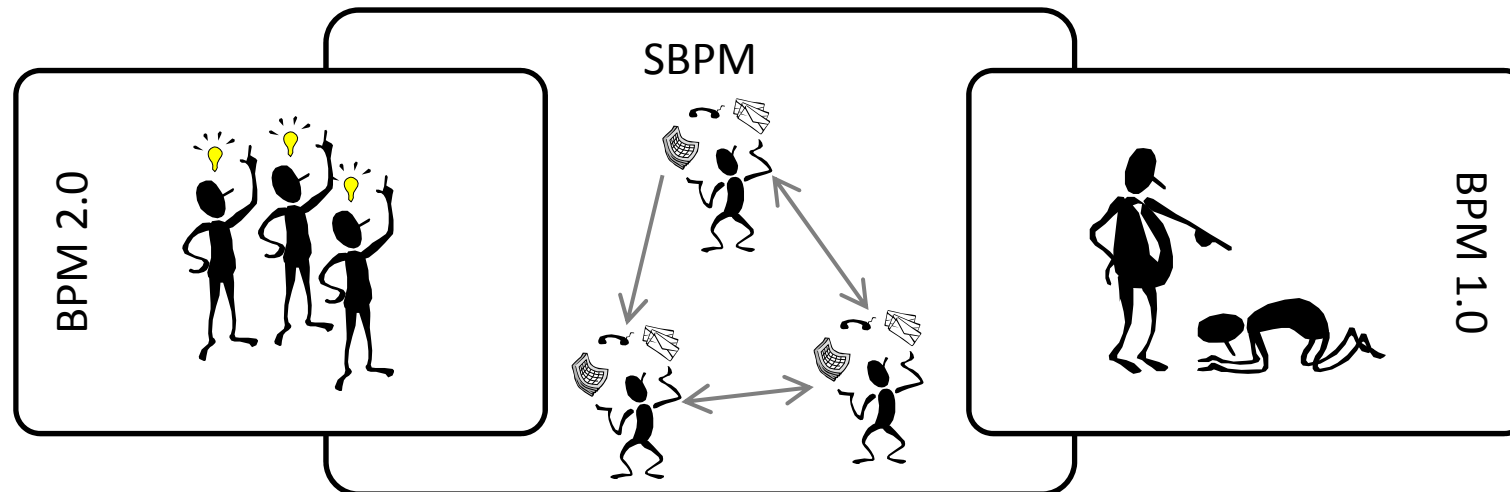
BPM 2.0

- Design and improvement of business processes by business users
- Managed self-organization
- Transferring Web 2.0 principles to BPM

Achieving Flexibility

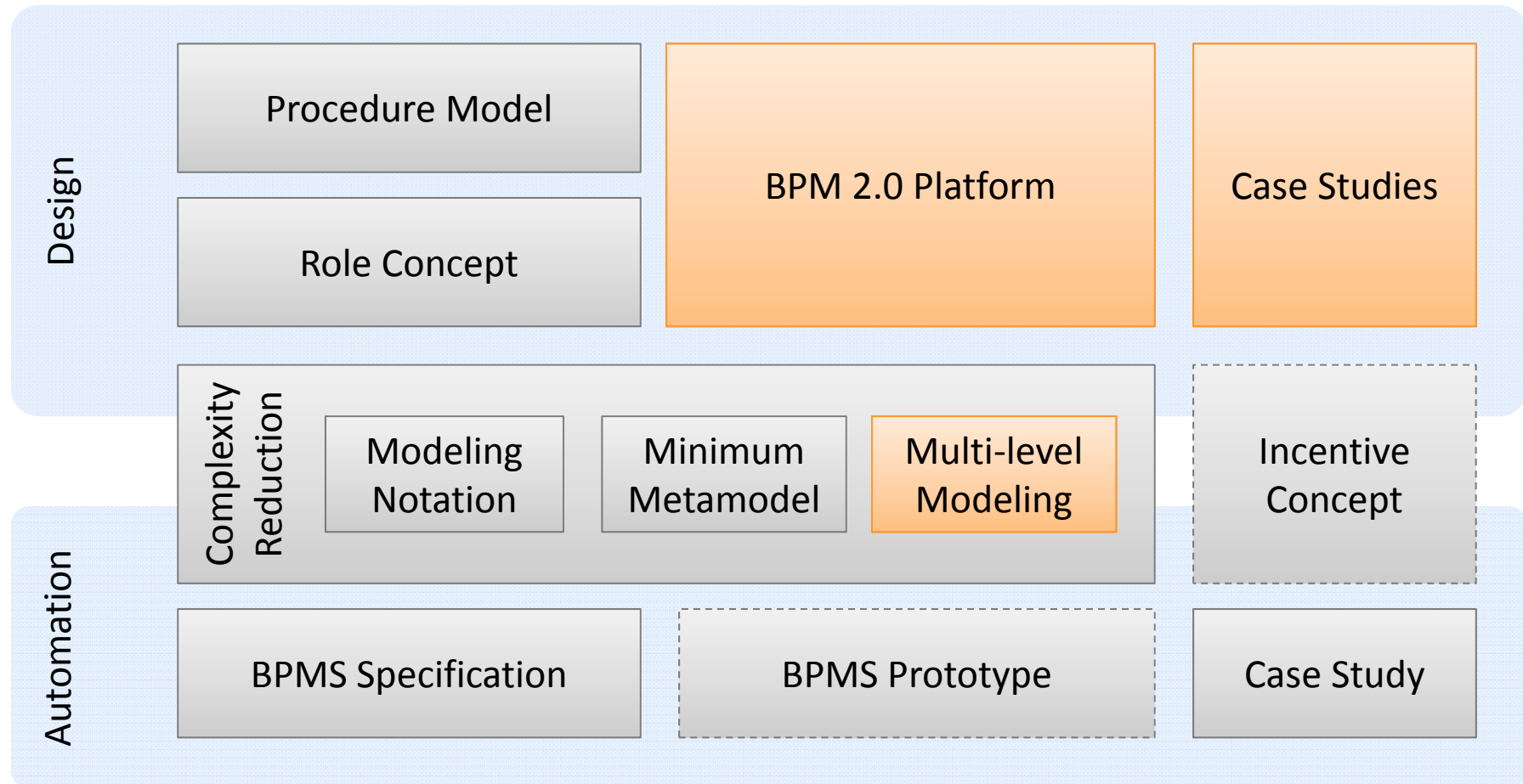
- Adaptation to new challenges by collaboration of the operational domain experts
- Ensure that business processes models are brought to live in the day-to-day business
- Automation using service-oriented architectures





Subject-orientation in S-BPM vs. BPM 2.0

- S-BPM: Introduces a new paradigm for structuring process models (Subjects as first-class citizens in process models)
- BPM 2.0: Introduces a new paradigm for the creation of process models (Subjects as designers and innovators of process models)



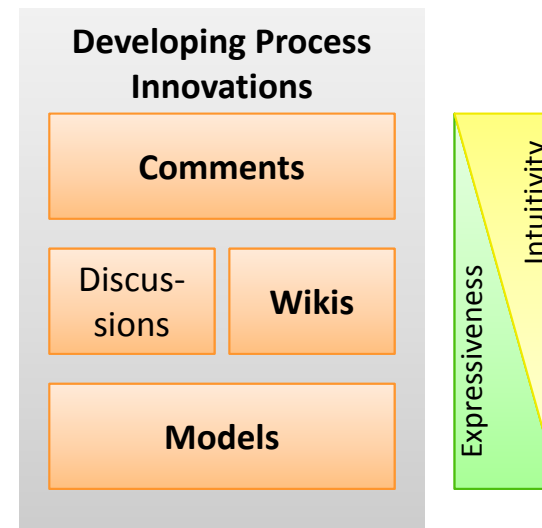
Challenges

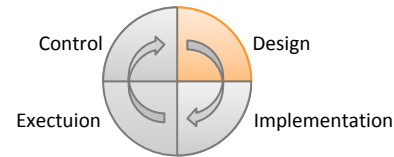
- Varying modeling know-how
- Limited skills wrt. formalisms
- Expressiveness vs. intuitivity



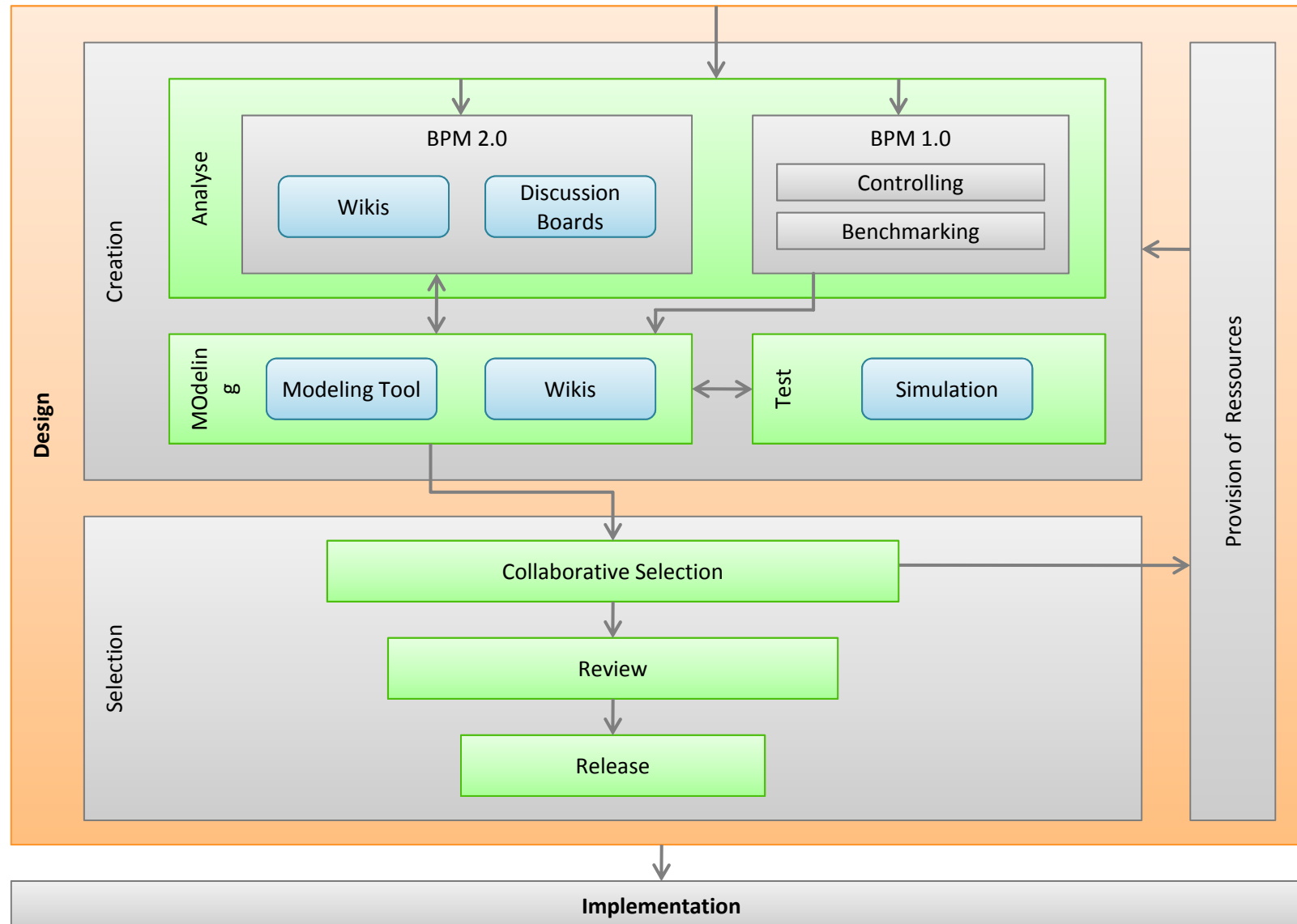
Solution

- Multi-level modeling concept as an instrument to include business users with different levels of BPM expertise





Entwurf



BPM 2.0 Platform: Screenshot

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Business Process Management meets Empowerment



The screenshot displays the BPM 2.0 Platform interface within a Windows Internet Explorer browser window. The interface is divided into several sections:

- Left Sidebar:** Contains navigation links for 'View All Site Content', 'Surveys' (Missing Aspects), 'Documents' (Documents), 'Lists' (Calendar, Tasks, Issues), 'Discussions' (Team Discussion), 'Sites', 'People and Groups', and a 'Recycle Bin'.
- Top Navigation:** Includes 'Home - Subcontract Management Ku' and a 'Site Actions' menu.
- Central Area:**
 - Collaborative Process Editor:** Displays a process model diagram with nodes labeled 'a' and 'b'. A yellow callout box points to this area with the text 'Process models with post-it comments'.
 - Team Discussion:** A section for team discussions, with a yellow callout box labeled 'Discussion Boards'.
 - Surveys:** A section for surveys, with a yellow callout box labeled 'Survey about the readiness to release'.
- Right Panel:**
 - BPM 2.0 Phase:** A vertical list of phases: Design (highlighted), Selection, Conception, Implementation, Stabilization, Execution, and Control. A yellow callout box points to this list with the text 'Current phase in the procedure model'.
 - Important Wiki Topics:** Includes links for Abbreviations, Overview, and Add new link. A yellow callout box points to this section with the text 'Wiki with supplemental information'.
 - Open Issues:** A table for open issues with columns for Issue ID, Title, Assigned To, Priority, and Due Date. It includes a 'New' button and an 'Add new item' link.
 - Documents:** A list of documents with columns for Type and Name. It includes an 'Add new document' link. A yellow callout box points to this section with the text 'Process documents'.
 - Calendar:** A section for the calendar, showing 'Crash-Course BPM 2.0-Platform' and an 'Add new event' link.
 - Announcements:** A section for announcements, with a note to 'add a new announcement'.

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BPM 2.0: Conducted Case Studies



Wholesale Company

- Internal documentation
- Developing business processes for a new business model
- *Extensive use of the BPM 2.0 platform*

Anonymity
requested
(RCA)

Plant Construction Company

- Improvement of multiple business process models
- Comparison of classical and BPM 2.0 approach
- *Extensive use of the BPM 2.0 concept and platform*



IT Service Provider

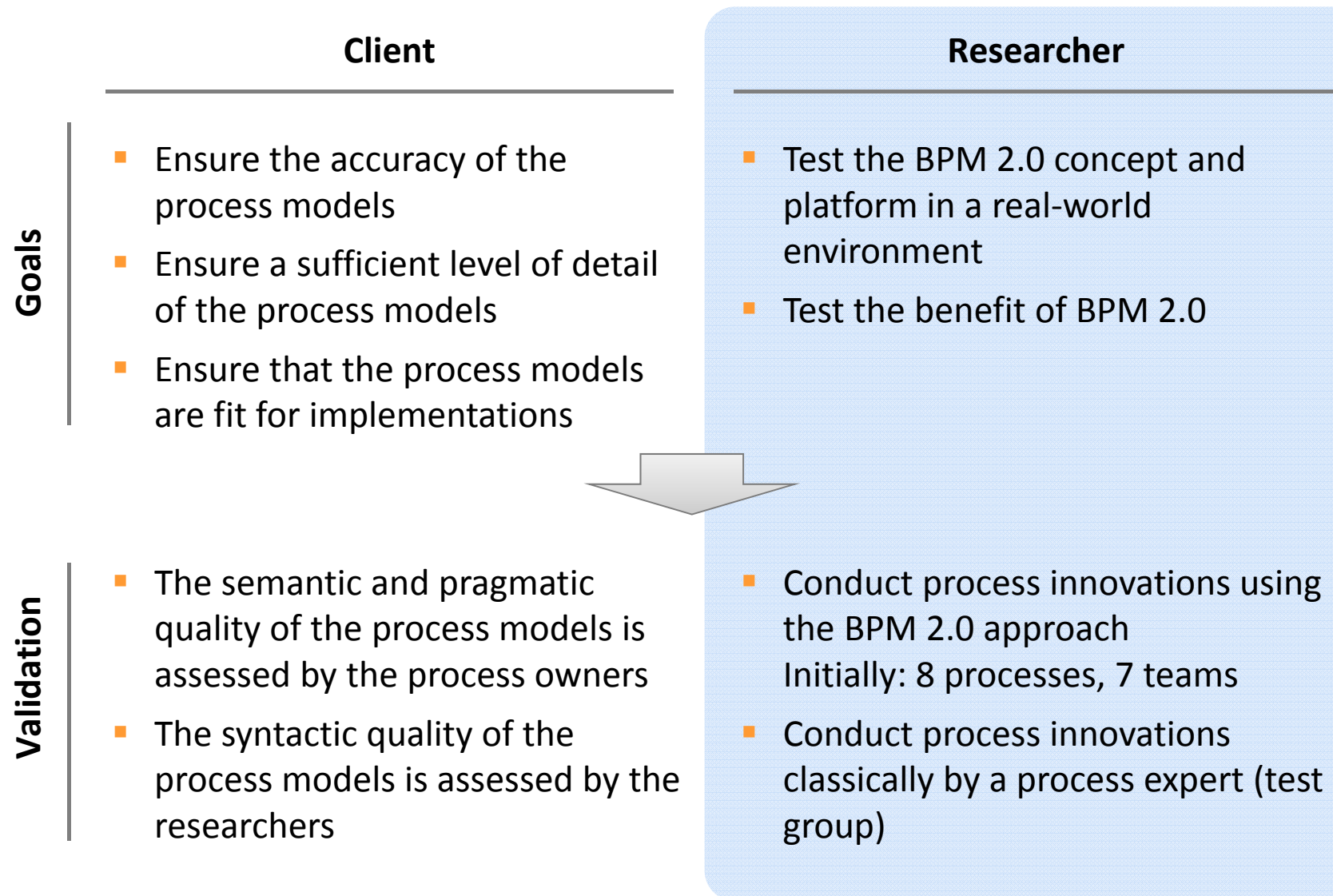
- Joint project: Development of a BPM 2.0 BPMS for the automated delivery of integration-centric IT services
- *Extensive improvement of the BPM 2.0 concept*

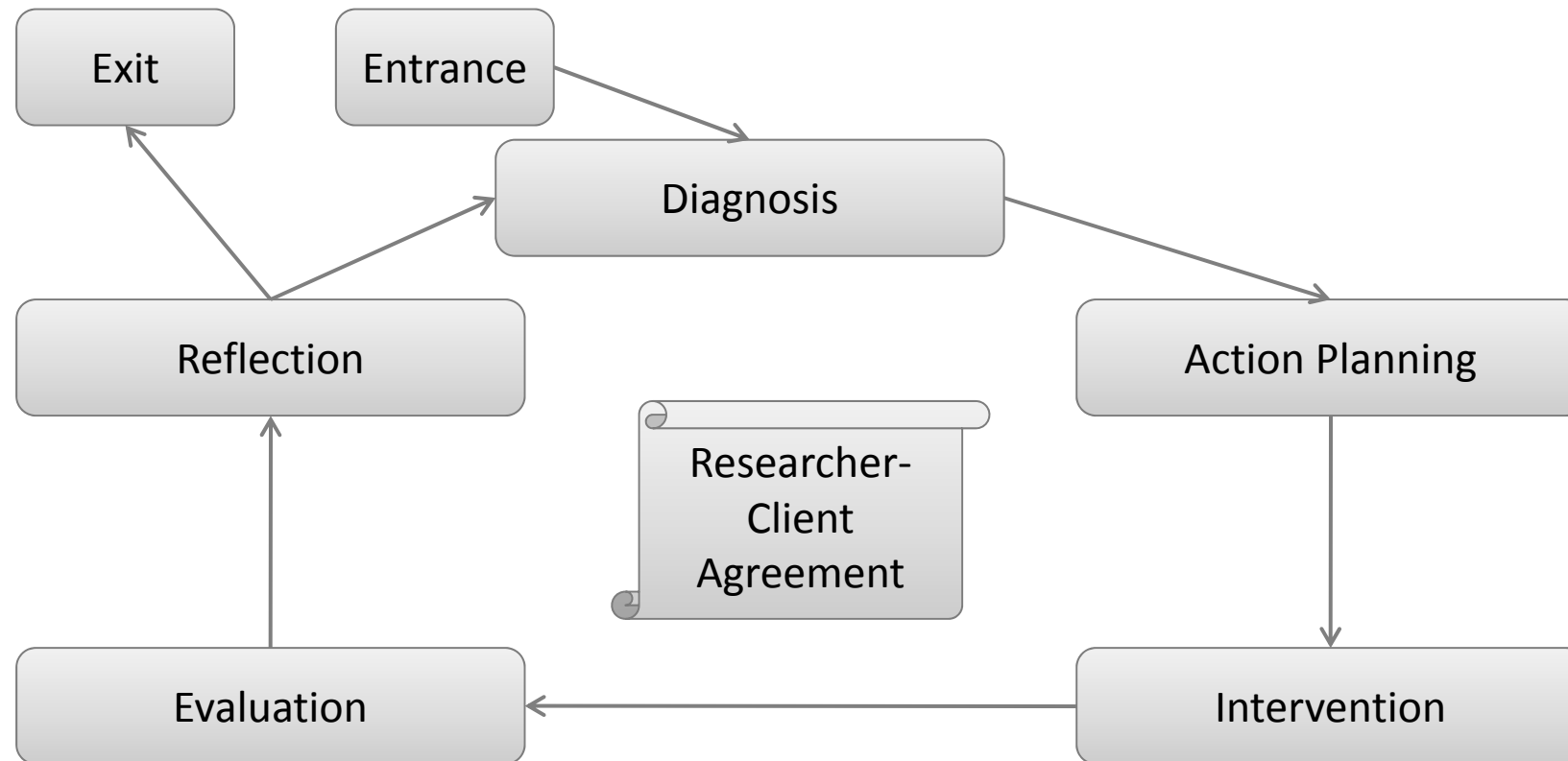


Defense Company

- Redesign of a supply management process
- *Use of the BPM 2.0 platform*

BPM 2.0 Case Study: Measuring the BPM 2.0 Performance





Characteristics

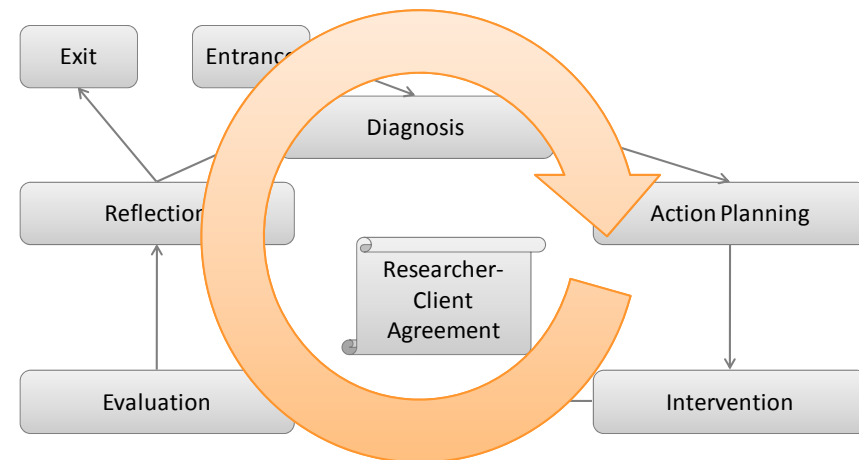
- Joint effort between client and researcher
- Ensures Scientific soundness while examining real-world scenarios using a qualitative approach

Scope

Improvement of the Process Models
by the Employees
(BPM 2.0 Process Innovations)

Iterations

1. Preparation
2. Encouraging contributions
3. Improving the model quality





(1) Diagnosis

- Outdated process models
- Insufficient level of detail
- Insufficient implementation
- Process interfaces are not well-aligned
- Syntactical errors

(2) Action Planning

- Define selection criteria for process models (Non-trivial, limited complexity, reasonable interfaces, cooperation of the process owner)
- Adaptation of the BPM 2.0 platform (eEPC)
- Design of a training concept
 - Web-based training material
 - Training workshop



(3) Intervention

- Champions contacted stakeholders
- Eight processes were selected for the CAR project (PI1 to PI8)
- BPM 2.0 platform was installed in the client's intranet (AD integration)
- One extensive training workshop was conducted (PI1)
- All other PI teams attended only a brief kick-off

(4) Evaluation

- Process owners agreed to participate swiftly
- One process innovation team (PI1) used the platform intensively during the workshop, but 50% of its team members expressed their unwillingness to use the platform outside of the workshop

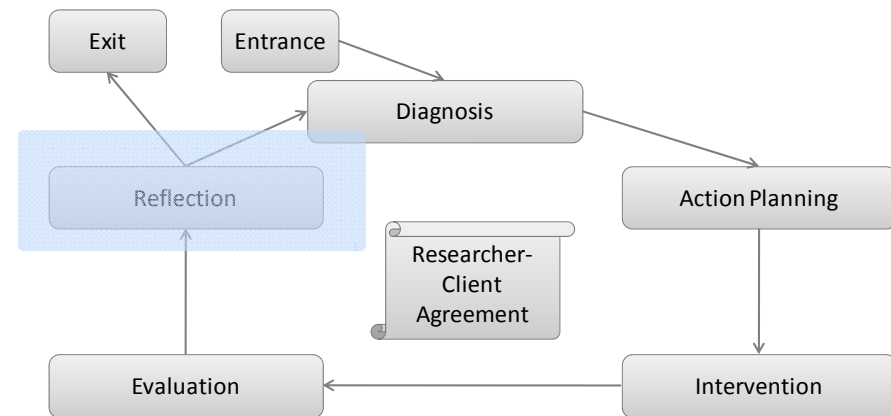
BPM 2.0 Case Study: Iteration 1: Preparation

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(5) Reflection

- Willingness to use a web-based platform seem to correlate with the age of the participants
- Champion role is vital for the initial success



BPM 2.0 Case Study: Iteration 2: Encouraging Contributions

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(1) Diagnosis

- Support by the management and the process owners ensured
- Otherwise, little changes so far

(2) Action Planning

- Little direct interaction
- Monitoring of the progress

(3) Intervention

- The interaction with the platform and the progress of the process innovation were measured using the versioning capability of the platform
- Process innovations showing little progress were offered assistance periodically
- The management support was intentionally not leveraged



(4) Evaluation

- Splitting of the processes:
 - PI1 (PI1a,PI1b)
 - PI7 (PI7a – PI7b)
- Little progress: PI8 (high workload)
- Extensive use of the post-it and – to a lesser degree – the modeling functions
- Wikis and discussion boards were used rarely
- Frequent syntactic and semantic errors in PI1*
- Very frequent syntactic and semantic errors in PI7*
- After substantial improvements, PI4 encountered a dead end
- According to the process owners, all process innovations except PI4 and PI8 showed substantial progress

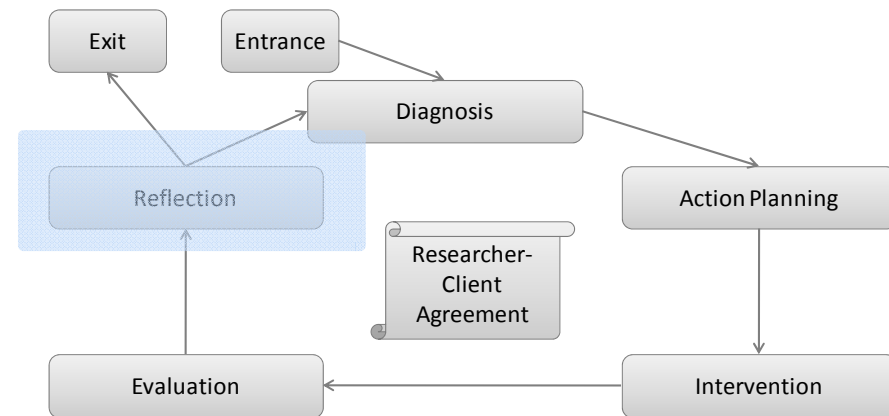
BPM 2.0 Case Study: Iteration 2: Encouraging Contributions

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(5) Reflection

- Contributions depend (1) on willingness to work with the tool and (2) the perceived priority of the process innovations
- Multi-level approach to reduce the complexity was successful
- The modeling knowledge proved to be insufficient
- The complexity of PI4 proved to be too great



BPM 2.0 Case Study: Iteration 3: Improving the model quality

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(1) Diagnosis

- Overall, the project was successful so far
- Formal errors in the process models had to be reduced

(2) Action Planning

- Considered options
 - Conduct further workshops
 - Improve the training material
 - Provide assistance to the modelers
- The modeling guidelines were improved
- An online video tutorial was created
- The role “modeling specialist” was introduced to the role concept
- Conduct a workshop for PI4



(3) Intervention

- The modeling specialists removed syntactical errors from the process innovations
- A workshop for PI4 was held

(4) Evaluation

- PI1* and PI7* improved substantially
- The other processes had little errors at the beginning of iteration three
- Correcting errors in the process models turned out to be a time-consuming task
- PI8 remained unchanged
- The workshop for PI4 was unsuccessful, as it became apparent that the participants had fundamentally different understandings of the process
- PI1*-PI3 and PI5-PI7* were introduced in the company's process house

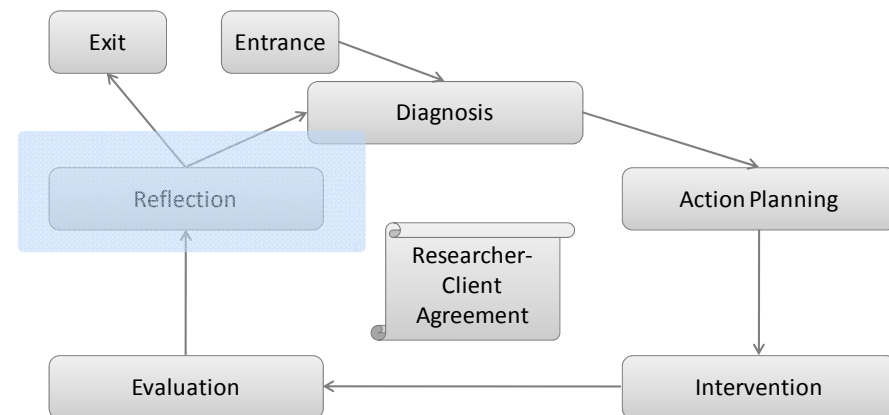
BPM 2.0 Case Study: Iteration 3: Improving the model quality

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(5) Reflection

- Introducing the role of the modeling specialist turned out to be necessary for teams with limited modeling knowledge
- The high workload associated with this role requires a careful distribution of the task
- Complex issues like that of PI4 apparently cannot be efficiently addressed by the BPM 2.0 approach



Improved Quality (PI1a,b-PI3 and PI5-PI7a,b,c,d)

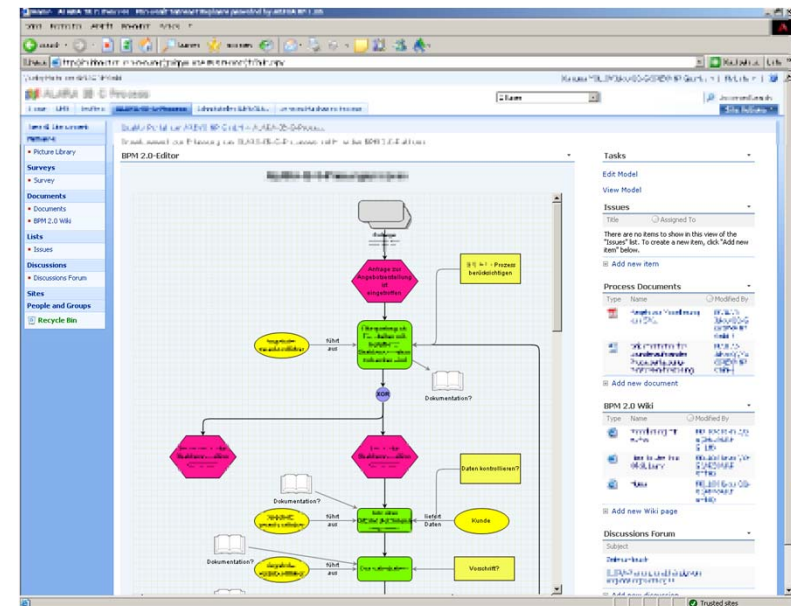
- Improved level of detail
- Improved accuracy
- Improved fitness for implementation

Limitations of the Approach

- Highly complex scenarios do not benefit from self-organization

Extension of the Role Concept

- Champion
- Modeling specialist



Idea

Compare the process innovations using BPM 2.0 with those relying on a BPM consultant



Challenge

The process models might exhibit different complexity → “Comparing apples and oranges”



Solution

Determine the complexity of each process model



Complexity Metrics

- Control flow complexity (CFC)
- Number of activities (NoA)
- *Interface complexity (NoI)*
- *Number of involved persons (NoP)*
- *Number of involved departments (NoD)*



Applied Complexity Metric

$$\begin{aligned} MC = & 0,5 * (CFC + NoA + NoI) \\ & + 0,3 * NoP \\ & + 0,25 * NoF \end{aligned}$$

Idea

- Combine these metrics to a single metric



Challenge

- How to weight these metrics?



Solution

- Assess the weights subjectively
- Determine the complexity for the process models of all conducted process innovations
- Ask the experts whether the relations between the calculated complexity are reasonable

BPM 2.0 Case Study: The Business Case

Conventional Approach

BPM 1.0 Team	Number of Process innovations	Time Span (Weeks)	Accumulated Employee Hours	Accumulated Consultant Hours	Accumulated Model Complexity	Ratio Hours/ Complexity		
						Employees	Consultant	Accumulated
I	5	4	29,50	21,00	38,00	0,78	0,55	1,33
II	2	3	14,00	5,00	17,30	0,81	0,29	1,10
III	4	8	40,50	19,50	61,30	0,66	0,32	0,98
Sum	11	15	84,00	45,50	116,60	0,75	0,39	1,14

129,50

BPM 2.0 Approach

BPM 2.0 Team	Number of Process Innovations	Time Span (Weeks)	Accumulated Employee Hours	Accumulated Modeling Specialist Hours	Accumulated Model Complexity	Ratio Hours/ Complexity		
						Employees	Modeling Specialist	Ratio Complexity/ Hours
I	2	10	59,00	12,00	17,80	3,31	0,67	3,99
II	2	6	15,75	2,75	27,40	0,57	0,10	0,68
III	0	4	-	4,00	Cancelled			
IV	1	2	5,00	1,00	10,35	0,48	0,10	0,58
V	2	4	8,25	2,50	24,20	0,34	0,10	0,44
VI	4	20	31,00	10,50	55,50	0,56	0,19	0,75
Sum	11	42	119,00	28,75	135,25	0,88	0,23	1,29

147,75

- The BPM 2.0 approach required less overall workload than the conventional approach (except BPM 2.0 team I)
- The BPM 2.0 approach required a larger time span
- Substantial potential for cost savings:
 - A modeling specialist requires less qualification than a consultant
 - Less modeling specialist involvement in BPM 2.0 than consultant involvement in the conventional approach

Multiple Workshops

Time

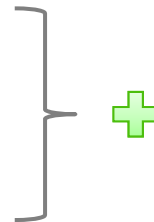
- Time span
- Accumulated hours of work



- More time required
- Fewer resources required

Costs

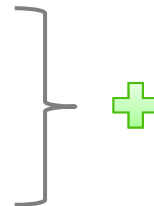
- Domain experts
- BPM consultant
- Modeling specialist
- (Licenses)



- Savings due to more efficient use of resources
- The BPM 2.0 platform was made available without any license costs

Quality

- Semantic correctness
- Syntactic correctness
- Fitness for implementation



- Same quality like in the BPM 2.0 approach
- Plus: Better implementation due to increased employee integration

| **BPM 2.0**

| **BPM 2.0 Applied**

| **Outlook**



Plans

- Complete another BPM 2.0 case study
- Develop an incentive concept for BPM 2.0
- Automation
 - Analyze the potentials of BPM 2.0 for automation
 - Develop a BPM 2.0 BPMS prototype
- Create a semi-quantitative model about the flexibility barriers in BPM



Expert Interviews for the PhD project “BPM 2.0”

- Goal: Create a semi-quantitative model of flexibility barriers in BPM
- Please contact me if you are interested in participating in the creation of this model by attending a series of expert interviews

Dipl.-Inf. Matthias Kurz
Wirtschaftsinformatik II
Universität Erlangen-Nürnberg
Lange Gasse 20, 90403 Nürnberg
matthias.kurz@wiso.uni-erlangen.de
www.wi2.uni-erlangen.de
+49 (0)911 5302-477

Step	Content	Time and Methods
Step 1: Expert interview	Flexibility Barriers in BPM	Required Time: 90 minutes Method: Semi-structured expert interview
Step 2: Model construction	Integrating the expert input into a first model	Interview analysis
Step 3: Questionnaire	Model validation	Required time: 15 minutes Method: Questionnaire
Step 4: Model fine-tuning	Adjusting the model based on the questionnaire	Analysis of the questionnaires
Step 5: Questionnaire	Assessing the relevance of the barriers	Required time: 15 minutes Method: questionnaire
Step 6: Model fine-tuning	Adjusting the model based on the questionnaire	Analysis of the questionnaires
Step 7: Expert interview	Assessing the BPM 2.0 approach with regard to the flexibility barriers	Required time: 20 minutes Method: Structured expert interview